

REMARKS

Independent claims 21, 32 and 41 (and claims depending there from) stand rejected under 35 U.S.C. §112, first paragraph as based on a non-enabling disclosure. Claims 21, 23-25, 27-32, 34-36 and 41 are rejected under rejected under 35 U.S.C. §§103(a) as being unpatentable over U.S. Patent 6,512,379 (hereinafter "Harrold") in view of U.S. Patent 5,552,711 (hereinafter "Deegan"). Claims 22 and 23 are rejected under rejected under 35 U.S.C. §103(a) as being unpatentable over Harrold and Deegan and further in view of U.S. Patent 5,970,393 (hereinafter "Khorrami"). Claims 37-40 are rejected under 35 U.S.C. §103(a) as being unpatentable over Harrold and Deegan and further in view of I.E.E.E. Interharmonic Task Force Publication titled *Interharmonics in Power Systems*. Claims 28 and 29 are objected to because of informalities noted in the Office Communication. Reconsideration of the rejections and objections, and allowance of all pending claims is requested in view of the foregoing amendments and the following remarks.

Claims 21-25 and 27-40 are pending.

Claims 28 and 29 have been amended to correct the informalities noted in the Office Communication in connection with their dependency. Accordingly, the objections noted in Office Communication should be withdrawn. Independent claims 21, 32 and 41 were amended to emphasize aspects of the invention.

Applicant objects to the inappropriate personal opinions expressed by the Examiner in connection with the merits of the present invention. For instance, at page 4, lines 7-10 the Examiner inappropriately opines that the claimed invention "represents an inferior, and perhaps falsely reassuring method . . .". M.P.E.P. 707.07(d) cautions that an Examiner should refrain from expressing in the record personal opinion regarding the merits of the invention. The concern, of course, is that an examiner's adverse personal opinion regarding the technical merit of an invention could adversely impact the fairness of the examination of the application.

Applicant also makes reference to M.P.E.P. 707.07(g) wherein piecemeal examination should be avoided. The present Office Communication constitutes at least the fourth office action on the merits in connection with the present invention. Furthermore, at least independent claims 21 and 32 have been in front of the Examiner twice and now for the first time the Examiner

raises new grounds of rejection under 35 U.S.C. §112, first paragraph. See also M.P.E.P. 2164.05 advising that in accordance with the principles of compact prosecution, if an enablement rejection is appropriate, the first office action on the merits should present such a rejection.

Lastly, before dealing with the substance of the rejections, applicant refers to M.P.E.P. 707.02 where Supervisory Patent Examiners are advised to impress their assistants with the fact that the shortest path to final disposition of an application is by finding the best references on the first search and carefully applying them.

With regard to rejections under 35 U.S.C. §112, first paragraph, it is a fundamental requirement at the heart of the U.S. patent system that enablement must be viewed from the vantage point of one of ordinary skill. Accordingly, specifications “need only be reasonable with respect to the art involved; they need not inform the layman nor disclose what the skilled already possess. They need not describe the conventional The intricacies need not be detailed *ad absurdum*.” This sentiment has been echoed many times. For example, the Federal Circuit has also stated the following: “The question is whether the disclosure is sufficient to enable those skilled in the art to practice the claimed invention without undue experimentation; hence the specification need not disclose what is well known in the art.” (citations omitted) See M.P.E.P. 2164.01.

Claim 21 is directed to a turbo engine including a plurality of rotor blades. Claim 21 in part recites a measuring element that operates in a kilohertz frequency range for measuring an electric or magnetic field strength set up by a charge distribution on the surface of the rotor blades or guide vanes and for generating a signal indicative of the electric or magnetic field strength. As described in the specification, one example of a measuring element may be a coaxial antenna 6 (e.g., capacitance coupling). Another example may be an induction sensor. See paragraphs 43 and 46 of the US patent application publication (US-PAP) of the present invention. See also FIGs 4-6.

As better appreciated in FIG. 4, the measuring element may be arranged near a radially disposed row of the rotor blades or near a radially disposed row of the guide vanes. See paragraph 43 of the US-PAP. The operating frequency range of the measuring element is based on a rotational speed of the turbo engine and the number of rotor blades per row or the number of guide vanes per row. The specification describes an example where the rotational speed of the turbo engine is 3600 revolutions per minute and the number of rotor blades is 80. Thus, in this

example, the measurement element supplies a signal that oscillates at a frequency of 4800 Hz. See paragraph 43 of the US-PAP. One skilled in the art would appreciate that a signal having a frequency of 4800 Hz is not a radio frequency, as would be generated by prior art devices based on the so called “tribo-charging effect” such as Harrold.

Claim 21 further recites a monitoring unit, such as monitoring unit 11 shown in FIG. 5, for determining when the signal deviates from a threshold, such as a threshold 15 in FIG. 5. The threshold may be defined responsive to at least one of a load condition of the turbo engine and a location of the rotor blades or the guide vanes relative to an outlet of the turbo engine. The specification describes that information on the integrity of the blades can be obtained in the time domain, or in the frequency domain. This is consistent with the example embodiment shown in FIG. 5 where a FFT unit 16 is downstream from monitoring unit 11. The Office Communication appears to interpret that a measuring element that operates in a kilohertz frequency range (e.g., 4800 Hz) necessarily requires frequency domain operation. This interpretation is incorrect since a measuring element that operates in a kilohertz frequency range in view of the specification should be construed as a measuring element that measures a signal in the time domain, where that signal oscillates in a kilohertz frequency range, as opposed to a radio frequency range. M.P.E.P. 2164 states that an enablement rejection based on the grounds that a disclosed critical limitation is missing from a claim should be made only when the language of the specification makes it clear that the limitation is critical for the invention to function as intended. In the instant application, the specification does not describe that a frequency domain operation is a critical requirement and, on the contrary, describes example embodiments consistent with a time domain operation of a signal that oscillates in a kilohertz frequency range.

Moreover, the Office Communication appears to get unnecessarily bogged down on the issue of identifying damage on a single blade. However, the specification describes that each measuring element may be assigned to a ring (e.g., row) of turbine blades. Thus, determining on which ring precisely the damage to the surface coating has occurred. In addition, it is expressly contemplated to use a synchronization pulse, for example correlated with the line frequency (e.g. 60 Hz), to determine on which blade precisely the damage to the surface coating has occurred. See paragraph 51 of the US-PAP.

Consistent with case law and the M.P.E.P., applicant once again notes that patent specifications need not turn into academic dissertations or engineering specifications since they

need just be reasonable with respect to the art involved; they need not inform the layman nor disclose what the skilled already possess. In view of the foregoing considerations, it is respectfully submitted that the Office Communication has failed to establish a *prima facie* case regarding lack of enablement. It is respectfully submitted that the disclosure is sufficient to enable those skilled in the art to practice the claimed invention without undue experimentation and consequently this basis of rejection should be withdrawn.

With regard to the rejections of claims 21-40 under 35 U.S.C. §103(a), Harrold is applied in each combination of references to reject claims. Harrold is used as prior art through 35 U.S.C. §102(e) to reject claims under §103(a). However, Harrold should be excluded under the common ownership/assignee exception provided by 35 U.S.C. §103(c). More particularly, the undersigned attorney states that the present application and Harrold were, at the time the invention was made, wholly owned by the same parent organization, Siemens Aktiengesellschaft. Harrold is assigned on its face to Siemens Westinghouse Power Corporation, which has changed its name to Siemens Power Generation, Inc., which in turn is wholly owned by Siemens Corporation, which in turn is wholly owned by Siemens Aktiengesellschaft. Consequently, Harrold is not believed to be a valid reference under the statute. Accordingly, this basis of rejection should be withdrawn.

Conclusion

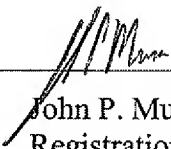
It is respectfully submitted that each of the claims pending in this application recites patentable subject matter and it is further submitted that such claims comply with all statutory requirements and thus each of such claims should be allowed.

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The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, including the fees specified in 37 C.F.R. §§ 1.16 (c), 1.17(a)(1) and 1.20(d), or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

Dated: 10/10/17

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